988-2

Coal - Surface Fatalities Second Half - 1988

U.S. Department of Labor
Mine Safety and Health Administration

ABSTRACTS WITH ILLUSTRATIONS

ANALYSIS AND SUGGESTED USES

L 38.20/3:

INTRODUCTION

The 1988 Fatal Illustration Program is divided into four large categories or subject areas. These categories are underground coal mining; surface coal mining; underground metal/nonmetal mining; and surface metal/nonmetal mining.

The materials in this unit include illustrated abstracts (summaries) of all chargeable surface coal mining fatalities for the second six months of 1988 accompanied by 35mm slides, and a statistical analysis of the accidents in that category.

The analysis section retains the same format used in past years. This package of materials, through its abstracts, slides and statistics, has been an effective training tool for the mining industry, especially small mines. This program has been used by various companies in safety meetings, annual refresher training, new miner training, and task training.

Each year, we attempt to improve our Fatal Illustration Program based on comments received from the mining industry. In response to suggestions received on our 1987 Program, the second half of the 1988 Fatal Illustration Program is now available on videotape.

Since a large percentage of the 1988 fatalities were classified as powered haulage and several victims were contractor employees, the Academy is developing separate fatal illustration programs covering these two areas. These two programs are also available from the Academy at no cost.

How Companies Use the Fatal Illustration Program

Many mining companies use the Fatal Illustration Program to train supervisory and nonsupervisory personnel. The abstracts, slides and statistics readily lend themselves to group safety training, new miner training, and task training.

Following are quotations from various mining companies and organizations that use this material in their training programs:

"These programs have been an excellent addition to our annual refresher classes, prompting excellent discussions from the men attending."

Mine Safety Service

"We find this to be excellent material for teaching accident prevention and hazard awareness."

ındustrial Education Corp.

"This program is the best yet by showing the way accidents, injuries, and death happen and the ways of prevention."

Silver Buckle Coal Corp.

"These slides are excellent in depicting dangers to students who will soon be employed in the industry. They make a lasting impression."

West Virginia University,
Mining Engineering

"I want you to know that these slides of real world accidents open the eyes of our students to what the real world can be like. The old adage of 'a picture is worth a thousand words' truly applies."

Colorado School of Mines

Fatalities - Underground Coal Mines - Second Half 1988

Statistical Analysis

Thirteen fatal accidents occurred at surface coal mines during July through December 1988.

Victim's Experience

- Sixty-two percent of the victims were over 40 years old.
- Sixteen percent of the victims had less than one year's experience on the job they were doing when they were fatally injured.

Accident Classification

- Machinery accidents accounted for approximately 39 percent of the surface coal fatalities in the second half of 1988.

Mine Size

- Approximately 62 percent of the surface coal fatalities during the second half of 1988 occurred in large mines (20 or more employees).

Accident Location

- Twenty-three percent of surface coal fatalities occurred at preparation plants.

Fatalities by Victim's Age
Surface Coal 1988

This Table Shows Fatalities by Age of Victim

First Half 1988

Age (Years)	Number of Fatalities
18-20	1
21-25	1
26-30	2
31-35	3
36-40	1
56-60	2

Second Half 1988

Age (Years)	Number of Fatalities
21-25	1
26-30	1
31-35	1
36-40	2
41-45	4
46-49	2
50-55	1
55-60	1

Fatalities by Victim's Experience
Surface Coal 1988

This Table Shows Fatalities by Victim's Experience

First Half 1988

Experience (Years)	Mining Experience	Job Experience	Experience This Mine
0 - 6 mos.	1	3	3
6 mos.-1 yr.	-	1	-
1 - 2 yrs.	1	1	1
3 - 4 yrs.	1	-	-
6 - 7 yrs.	1	2	1
7 - 8 yrs.	1	-	-
11 - 12 yrs.	2	1	2
14 - 15 yrs.	1	1	1
25 - 35 yrs.	2	-	1

Second Half 1988

Experience (Years)	Mining Experience	Job Experience	Experience This Mine
0 - 6 mos.	1	1	2
6 mos. - 1 yr.	1	1	1
1 - 2 yrs.	-	3	2
3 - 4 yrs.	-	1	-
6 - 7 yrs.	-	2	1
9 - 10 yrs.	2	1	2
11 - 12 yrs.	1	-	1
13 - 15 yrs.	1	-	-
16 - 20 yrs.	4	3	2
21 - 24 yrs.	1	-	-
None	1	-	1
Unknown	1	1	1

Fatalities by Accident Classification
Surface Coal 1988

This Table Shows Fatalities by Accident Classification

Classification	Fatalities (1st Half '88)	Fatalities (2nd Half '88)	Fatalities (Total '88)
Powered Haulage	7	1	8
Electrical	1	-	1
Exploding Vessel	-	1	1
Fall of Highwall	1	-	1
Fall of Material	-	2	2
Fall of Person	1	2	3
Machinery	-	5	5
Other - Drowning	-	1	1
Gunshot	-	1	1

Fatalities by Victim's Occupation
Surface Coal 1988

This Table Shows Fatalities by Victim's Occupation

Occupation	Fatalities (1st Half '88)	Fatalities (2nd Half '88)	Fatalities (Total '88)
Auger Machine Operator	1	-	1
Car Dropper	1	-	1
Electrician	2	1	3
Equipment Operator	-	1	1
Explosives Handler	1	-	1
Highwall Drill Operator	1	-	1
Ironworker	1	1	2
Laborer	1	-	1
Logger	-	1	1
Mechanic	-	3	3
Security Guard	-	1	1
Shake-Out Operator	1	-	1
Supervisor	1	2	3
Tire Repairman	-	1	1
Truck Driver	-	2	2

Fatalities by Mine Size
Surface Coal 1988

This Table Shows Fatalities by Size of Mine

Mine Size	Fatalities (1st Half '88)	Fatalities (2nd Half '88)	Fatalities (Total '88)
Small*	4	5	9
Large**	6	8	14

* Less than 20 employees

** 20 or more employees

Fatalities by Location
Surface Coal 1988

This Table Shows Fatalities by Location of Accident

Location	Fatalities (1st Half '88)	Fatalities (2nd Half '88)	Fatalities (Total '88)
Preparation Plants	4	3	7
Other Surface Locations	6	10	16

SLIDE INDEX

Fatalities by Occupation
Surface Coal - Second Half 1988

You will find fatalities that happened to:

ELECTRICIANS on slide 14

EQUIPMENT OPERATORS on slide 12

IRONWORKERS on slide 22

LOGGERS on slide 17

MECHANICS on slides 13, 15, and 21

SECURITY GUARDS on slide 19

SUPERVISORS on slides 16 and 18

TIRE REPAIRMAN on slide 11

TRUCK DRIVERS on slides 20 and 23

Fatalities by Accident Classification
Surface Coal - Second Half 1988

You will find:

POWERED HAULAGE fatalities on slide 20

EXPLODING VESSEL fatalities on slide 21

FALL OF MATERIAL fatalities on slides 16 and 17

FALL OF PERSON fatalities on slides 22 and 23

MACHINERY fatalities on slides 11, 12, 13, 14, and 15

OTHER fatalities on slides 18 and 19

SLIDE INDEX

Fatalities by Location of Accident
Surface Coal - Second Half 1988

You will find fatalities that happened at:

PREPARATION PLANTS on slides 12, 16, and 19

OTHER SURFACE LOCATIONS on slides 11, 13, 14, 15, 17, 18, 20, 21, 22, AND 23

Fatalities by Mine Size
Surface Coal - Second Half 1988

You will find fatalities that happened at:

SMALL MINES* on slides 16, 17, 19, 22, and 23

LARGE MINES** on slides 11, 12, 13, 14, 15, 18, 20, and 21

* Less than 20 employees

** 20 or more employees

ABSTRACT OF INVESTIGATION

Date: August 5, 1988

Slide Number: 11 (Fatal Case Number: 30)
Accident Classification: Machinery
Type of Mine: Coal - Surface
Location: West Virginia

Age of Victim: 33
Total Mining Experience: 13 years
Total Experience this Mine: 6 months
Total Experience this Job: 6 years
Number Employed at Mine: 79
Number Working at Time of Accident: 33
Time of Accident: 2:30 p.m.
Mining Height: 42 inches

A tire repairman was fatally injured while changing the right rear tire on a rock truck. He had removed the flat tire from the truck, installed a new tire on the rim, placed a chain around the tire, and used the hydraulic boom to raise the tire to an upright position. While the tire was being inflated, the tire turned over pinning the repairman against the control levers of the boom. The weight of the repairman's body depressed the levers causing the boom to retreat and strike the repairman in the back.

Means of Prevention: All necessary work on tires shall be done while the tire is resting on its side.

ABSTRACT OF INVESTIGATION

Date: September 12, 1988

Slide Number: 12 (Fatal Case Number: 34)
Accident Classification: Machinery
Type of Mine: Coal - Preparation Plant (Truck Shop)
Location: Virginia

Age of Victim: 43
Total Mining Experience: 18 years
Total Experience this Mine: 18 years
Total Experience this Job: 18 years
Number Employed at Mine: 47
Number Working at Time of Accident: 3
Time of Accident: 4:30 p.m.
Mining Height: N/A

A heavy equipment operator was fatally injured while rolling a wheel assembly unit from beneath an end loader. The end loader had been blocked with pieces of wood. The machine slipped off the blocking material and keeled to the right. The victim was caught between the dipper of the end loader and the right front wheel.

Means of Prevention: When possible perform work in a level location. Use substantial material to block equipment. Use blocking to prevent horizontal movement of equipment.

ABSTRACT OF INVESTIGATION

Date: October 14, 1988

Slide Number: 13 (Fatal Case Number: 40)
Accident Classification: Machinery
Type of Mine: Coal - Surface
Location: Oklahoma

Age of Victim: 42
Total Mining Experience: 17
Total Experience this Mine: 2 years 5 months
Total Experience this Job: 2 years 5 months
Number Employed at Mine: 58
Number Working at Time of Accident: 40
Time of Accident: 11:30 a.m.
Mining Height: N/A

A mine mechanic was checking for a leak in the upper unit of the left front suspension strut of a caterpillar 773 end dump truck. He climbed to the top of the tire and laid across the tire with the upper part of his body between the tire and fender of the truck. He began to remove three bolts which held the cover assembly in place on top of the strut. He did not know the three bolts held a seal in place. When the seal broke, the O-ring broke and the cylinder lost its pressure. The body of the truck lowered and caught the victim between the fender and tire.

Means of Prevention: No work should be performed on equipment until the employee is familiar with the task to be performed. No work should be performed on equipment unless it is blocked to prevent collapse.

ABSTRACT OF INVESTIGATION

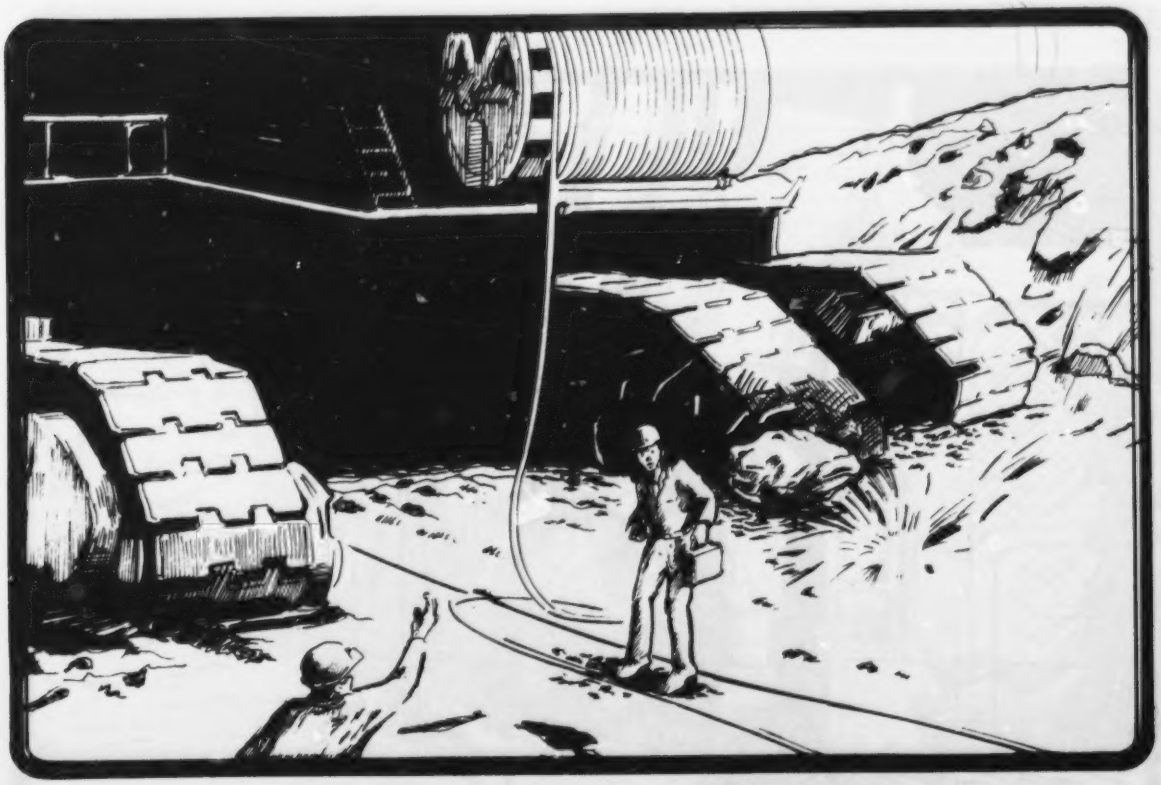
Date: October 24, 1988

Slide Number: 14 (Fatal Case Number: 42)
Accident Classification: Machinery
Type of Mine: Coal - Surface
Location: Indiana

Age of Victim: 45
Total Mining Experience: 20 years 10 months
Total Experience this Mine: 20 years 10 months
Total Experience this Job: 20 years 10 months
Number Employed at Mine: 430
Number Working at Time of Accident: 221
Time of Accident: 1:55 p.m.
Mining Height: N/A

The victim, an electrician, was positioned approximately 15 feet to the rear of a 5900 Marion Shovel and about 70 feet from the toe of the spoil pile. The shovel operator loaded his bucket in front of the shovel then swung the load to the right rear of the machine. When the shovel operator dumped the bucket of spoil material, a large rock, measuring 40 inches by 66 inches by 36 inches, rolled off the 90 foot spoil pile and struck the victim.

Means of Prevention: While machinery is in operation, do not position yourself in line with its work area.



ABSTRACT OF INVESTIGATION

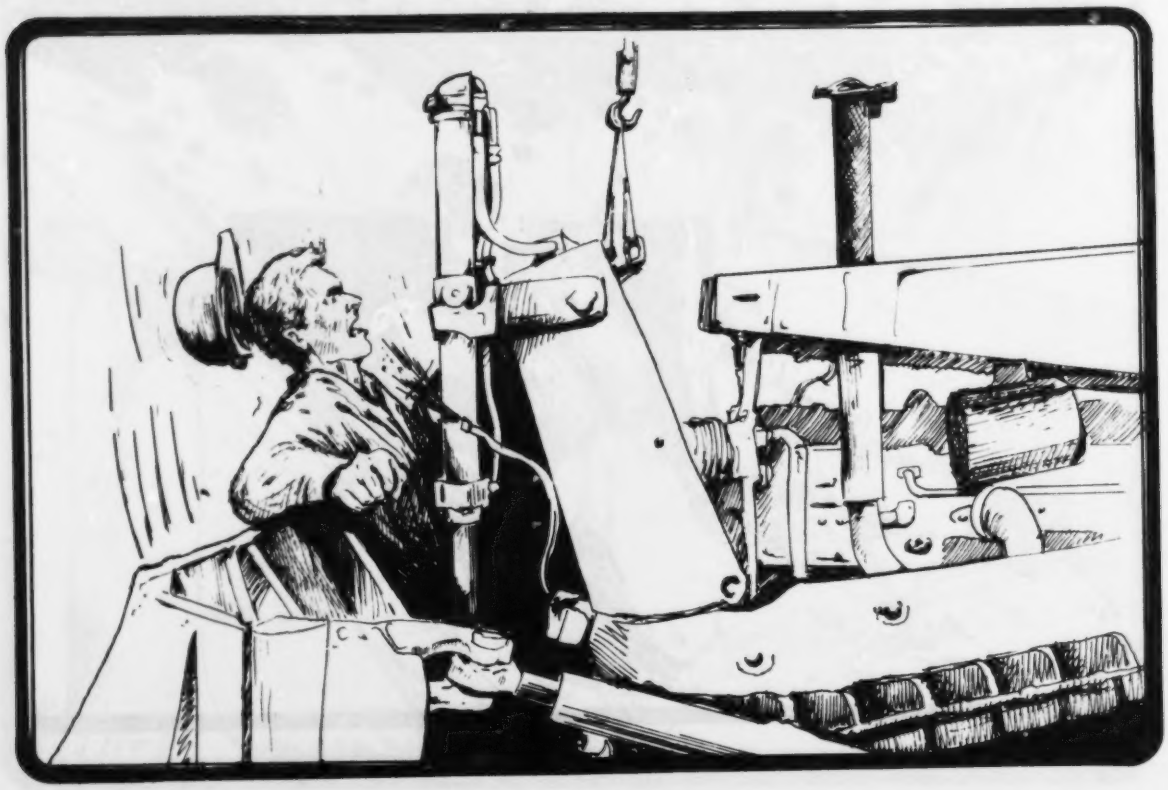
Date: November 4, 1988

Slide Number: 15 (Fatal Case Number: 45)
Accident Classification: Machinery
Type of Mine: Coal - Surface
Location: Ohio

Age of Victim: 38
Total Mining Experience: 12 years 9 months
Total Experience this Mine: 12 years 9 months
Total Experience this Job: 9 years 6 months
Number Employed at Mine: 800
Number Working at Time of Accident: 225
Time of Accident: 8:30 a.m.
Mining Height: N/A

Two mechanics were replacing the radiator on a bulldozer. The radiator cover was in the upright position and the blade was tilted forward. The victim unhooked the hydraulic line that controlled the tilt cylinder. When the pressure was released from the hydraulic line, the blade tilted backwards and pinned the victim between the dozer blade and the hydraulic jack. He received crushing injuries to the chest.

Means of Prevention: Before work is performed on any pressurized system, the piece/part shall be blocked against movement.



ABSTRACT OF INVESTIGATION

Date: October 3, 1988

Slide Number: 16 (Fatal Case Number: 39)
Accident Classification: Falling Material
Type of Mine: Coal - Preparation Plant
Location: Pennsylvania

Age of Victim: 27
Total Mining Experience: 10 years
Total Experience this Mine: 10 years
Total Experience this Job: 2 years
Number Employed at Mine: 12
Number Working at Time of Accident: 12
Time of Accident: 10:45 a.m.
Mining Height: N/A

A foreman was fatally injured when he crawled into a coal hopper (bin) to attempt to free a buildup of raw coal material from the feed hopper. The loader operator, unaware of the foreman's location, dumped two buckets of coal into the hopper covering the victim.

Means of Prevention: Erect a physical barrier at the grizzly and inform all employees when maintenance is being performed.

ABSTRACT OF INVESTIGATION

Date: December 2, 1988

Slide Number: 17 (Fatal Case Number: 48)
Accident Classification: Falling Material
Type of Mine: Coal - Surface
Location: West Virginia

Age of Victim: 48
Total Mining Experience: None
Total Experience this Mine: None
Total Experience this Job: 20 years (Cutting Timber)
Number Employed at Mine: 9
Number Working at Time of Accident: 9
Time of Accident: Approximately 1:00 p.m.
Mining Height: N/A

A logger was fatally injured while he and another worker were cutting timber in advance of a strip mining operation. They were unable to get a large tree completely cut because their saw blade was too short. One of the loggers decided to take a load of wood off the mountain. When he returned to the site, he found the victim lying on the ground with the tree on top of him. Apparently, the large tree fell on the victim while he was attempting to cut down an adjacent tree.

Means of Prevention: When cutting timber, complete the task at hand before starting another task.

ABSTRACT OF INVESTIGATION

Date: August 30, 1988

Slide Number: 18 (Fatal Case Number: 32)
Accident Classification: Other - Drowning
Type of Mine: Coal - Surface
Location: Arizona

Age of Victim: 39
Total Mining Experience: 9 Years
Total Experience this Mine: 9 Years
Total Experience this Job: 4 Years
Number Employed at Mine: 325
Number Working at Time of Accident: 129
Time of Accident: 3:00 P.M.
Mining Height: N/A

A water well supervisor (the victim) and two coworkers were installing a new pump float at a water impoundment site. The pump float was located approximately 70 feet from the shoreline and a crane was being used to position the float. The men were working from a walkway extending from the shoreline to the pump. At the time of the accident, the walkway was not secured to the shoreline and the three men were not wearing life preservers. As the plump float was being position, it struck a section of the pipeline and capsized the float and walkway. The three men feil into the water and the victim drowned.

Means of Prevention: While walking over water, wear a life preserver.

ABSTRACT OF INVESTIGATION

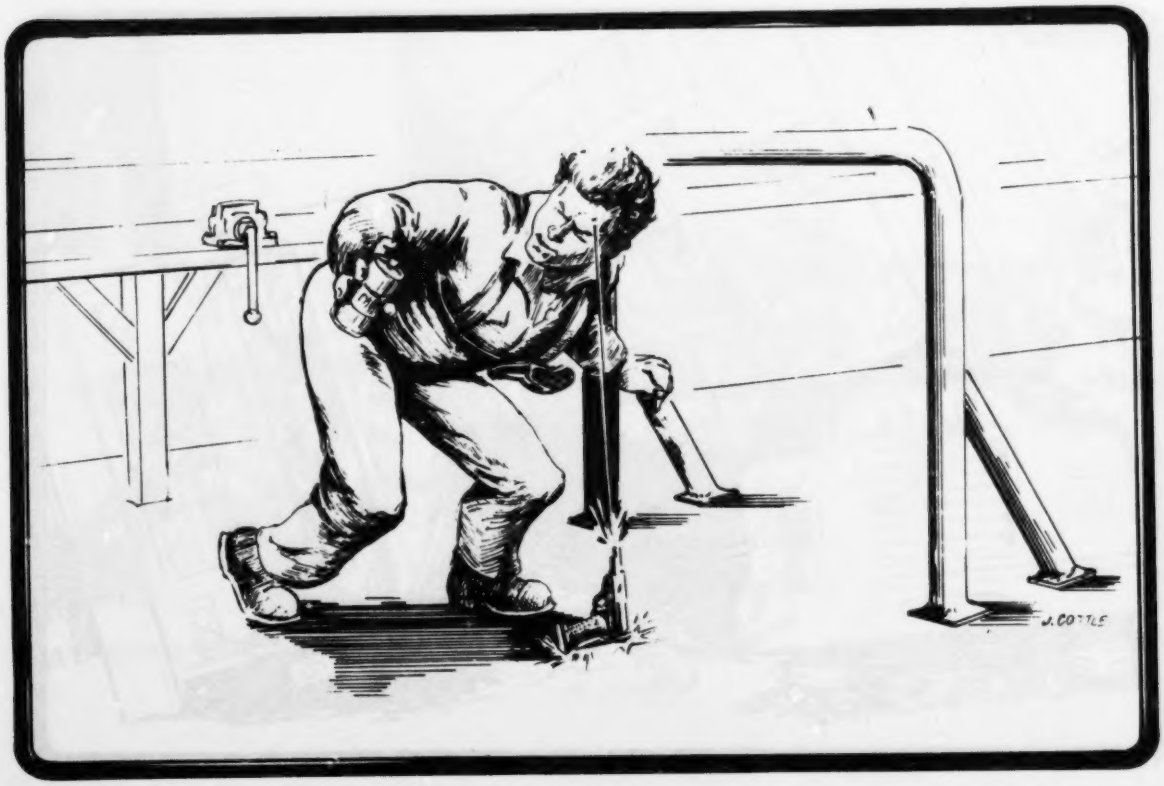
Date: September 27, 1988

Slide Number: 19 (Fatal Case Number: 37)
Accident Classification: Other - Gunshot Accident
Type of Mine: Coal - Preparation Plant (Shop)
Location: Kentucky

Age of Victim: 22
Total Mining Experience: 8-1/2 months
Total Experience this Mine: 8-1/2 months
Total Experience this Job: 8-1/2 months
Number Employed at Mine: 19
Number Working at Time of Accident: Unknown
Time of Accident: 1:00 to 4:00 a.m.
Mining Height: N/A

A security guard was fatally injured while working on his private vehicle in the shop area of a preparation plant. He was wearing a shoulder holster with a 9mm automatic pistol. Apparently he knelt down or leaned forward, and the pistol fell from the holster. The pistol discharged when it hit the floor, and the bullet struck the victim.

Means of Prevention: Do not allow guards to carry firearms when they are performing work other than their assigned duties. Provide a holster or similar device that will lock the firearm in place.



ABSTRACT OF INVESTIGATION

Date: December 2, 1988

Slide Number: 20 (Fatal Case Number: 47)
Accident Classification: Powered Haulage
Type of Mine: Coal - Surface
Location: Ohio

Age of Victim: 45
Total Mining Experience: 4 months
Total Experience this Mine: 4 months
Total Experience this Job: 4 months
Number Employed at Mine: 49
Number Working at Time of Accident: 21
Time of Accident: 8:35 a.m.
Mining Height: N/A

Two trucks were positioned side by side at a dump. After one of the truck drivers completed dumping the coal, he pulled out of the dump area with the bed of the truck still raised approximately 3/4 of the way up in the dump position. Due to the uneven ground, the truck tilted over and the bed crushed the cab of the other truck. The driver of the other truck was crushed while he was sitting in the cab of his truck.

Means of Prevention: No dumping operation shall be done when two trucks are parked parallel to each other.

ABSTRACT OF INVESTIGATION

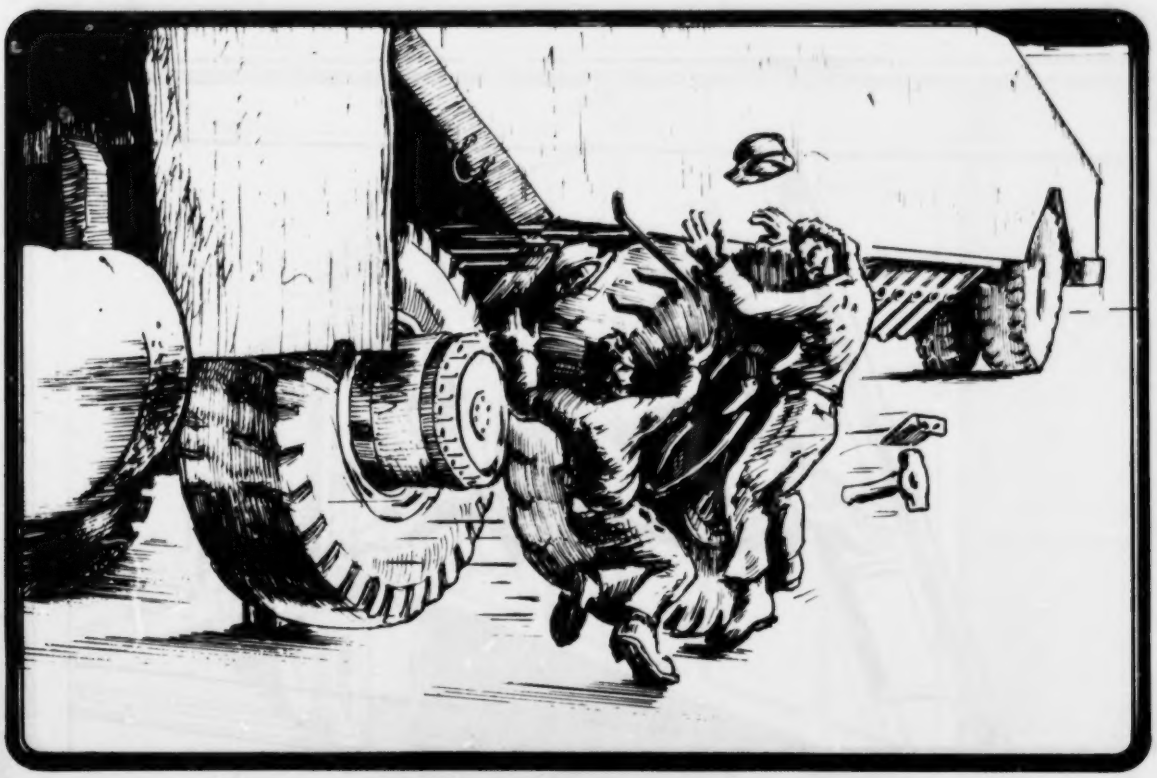
Date: July 19, 1988

Slide Number: 21 (Fatal Case Number: 28)
Accident Classification: Exploding Vessel Under Pressure
Type of Mine: Coal - Surface
Location: Illinois

Age of Victim: 57
Total Mining Experience: 20 years
Total Experience this Mine: 6 years 5 months
Total Experience this Job: 6 years 5 months
Number Employed at Mine: 100
Number Working at Time of Accident: 65
Time of Accident: 9:30 a.m.
Mining Height: N/A

An accident occurred in the shop area of a mine as three mechanics were attempting to remove a wheel from a 100-ton haulage truck. After five of the eight retaining wedges were removed, a portion of the hub assembly broke due to the air pressure (80-100 psi) in the tire. A violent air pressure release occurred throwing the remaining wedges and a piece of broken hub outward, striking two of the mechanics. One of the mechanics sustained fatal chest injuries and the other mechanic serious head injuries.

Means of Prevention: Before any work is performed on tires, the tires should be deflated.



ABSTRACT OF INVESTIGATION

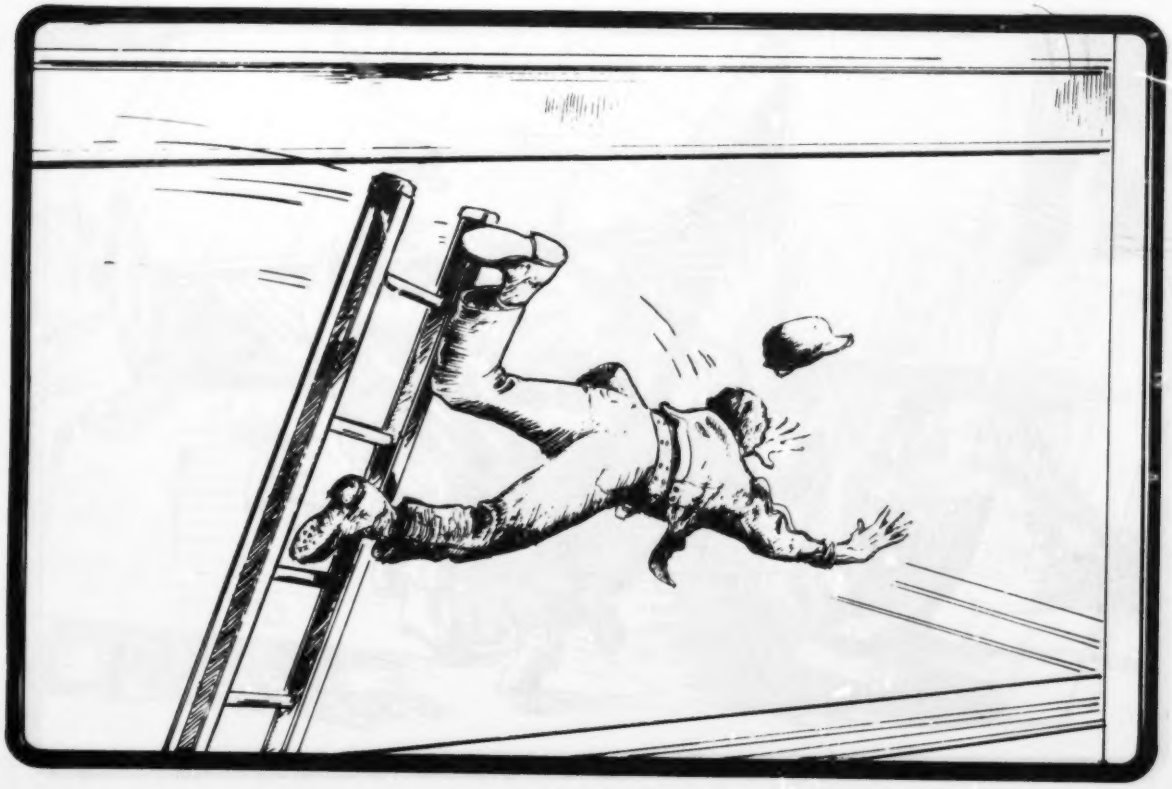
Date: July 27, 1988

Slide Number: 22 (Fatal Case Number: 29)
Accident Classification: Fall of Person
Type of Mine: Coal - Surface
Location: West Virginia

Age of Victim: 51
Total Mining Experience: 18 years
Total Experience this Mine: 1-1/2 years
Total Experience this Job: 1-1/2 years
Number Employed at Mine: 7
Number Working at Time of Accident: 4
Time of Accident: 8:18 a.m.
Mining Height: N/A

An ironworker was fatally injured when he fell approximately 32 feet during the construction of a metal bin. The victim had climbed a 24-foot extension ladder to tighten bolts of a metal plate that was being installed between 2 vertical metal beams. He lost his balance when the ladder suddenly slipped. He fell approximately 25 feet striking his head on a crossbar, and then fell an additional 7 feet to the ground.

Means of Prevention: Use lifelines and/or safety belt lanyards when traveling to and performing work at elevated positions.



ABSTRACT OF INVESTIGATION

Date: December 29, 1988

Slide Number: 23 (Fatal Case Number: 53)
Accident Classification: Fall of Person
Type of Mine: Coal - Surface
Location: Kentucky

Age of Victim: 48
Total Mining Experience: 30 years
Total Experience this Mine: Unknown
Total Experience this Job: Unknown
Number Employed at Mine: 12
Number Working at Time of Accident: 12
Time of Accident: 11:00 a.m.
Mining Height: N/A

A contract truck driver was injured when he fell from the bed of his truck while installing a tarpaulin. The victim had driven into the pit and had his truck loaded. He then drove to the top of the ramp, stopped, and climbed on the truck bed. He was installing the tarpaulin when he slipped and fell approximately 10 feet to the ground. The victim died from an infection he developed while in the hospital. (The accident occurred December 29, 1988, and the victim died January 22, 1989.)

Means of Prevention: Provide a spring loaded tarp roller with brackets that can be handled from the ground.